

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A screen-noise eliminating apparatus comprising:

a beam-spot-length control element for controlling increasing or decreasing the vertical length of a beam spot on a display screen generated by an electron beam of a cathode-ray tube for displaying a TV signal, said beam-spot-length control element operating to create a beam spot in a first state when a number of scanning lines in the TV signal exceeds a certain number, and operating to create a beam spot in a second state when a number of scanning lines in the TV signal is less than a certain number, wherein the beam spot has a greater vertical beam length in said second state than in said first state;

a vertical enhancement element for enhancing a given vertical-direction spatial frequency characteristic of said TV signal; and

a noise elimination control element for controlling said beam-spot-length control element and said vertical enhancement element so as to compensate said vertical-direction spatial frequency characteristic according to the ~~increase or decrease of~~ said beam spot length resulting from operation of said beam-spot-length control element.

2. (Previously Presented) A screen-noise eliminating apparatus as claimed in claim 1 wherein said noise elimination control element provides control in a manner so as to reduce spurious in said vertical-direction spatial frequency corresponding to a scanning-line interval, and enhance the high band of said vertical-direction spatial frequency.

3. (Currently Amended) A screen-noise eliminating apparatus comprising:

a beam-spot-length control element for increasing or decreasing the vertical length of a beam spot on a display screen generated by an electron beam of a cathode-ray tube for displaying a TV signal;

a vertical enhancement element for enhancing a given vertical-direction spatial frequency characteristic of said TV signal;

a noise elimination control element for controlling said beam-spot-length control element and said vertical enhancement element so as to compensate said vertical-direction spatial frequency characteristic according to the increase or decrease of said beam spot length; and

~~A screen noise eliminating apparatus as claimed in claim 1 further comprising a second horizontal deflection element for modulating a scanning velocity of said electron beam in the~~

horizontal direction wherein said noise elimination control element controls said ~~second~~-horizontal deflection element in a manner so as to reduce the high band of a horizontal direction spatial frequency characteristic according to the increase or decrease of said beam spot length.

4. (Previously Presented) A screen-noise eliminating apparatus as claimed in claim 3 further comprising a horizontal enhancement element for enhancing a given horizontal-direction spatial frequency characteristic of said TV signal wherein said noise elimination control element controls said horizontal enhancement element in a manner so as to compensate said horizontal-direction spatial frequency characteristic according to the increase or decrease of said beam spot length.

5. (Previously Presented) A screen-noise eliminating apparatus as claimed in claim 1 further comprising a feature detection element for detecting an edge of an image to be displayed from said TV signal wherein said noise elimination control element controls to reduce the extent of increase or decrease in said beam spot length upon an output from said feature detection element.

6. (Previously Presented) A screen-noise eliminating apparatus as claimed in claim 3 further comprising a feature

detection element for detecting an edge of an image to be displayed from said TV signal wherein said noise elimination control element controls to reduce the extent of said modulation of the scanning velocity in the horizontal direction in the edge section of the image upon an output from said feature detection element.

7. (Currently Amended) A screen-noise eliminating apparatus comprising:

a beam-spot-length control element for increasing or decreasing the vertical length of a beam spot on a display screen generated by an electron beam of a cathode-ray tube for displaying a TV signal;

a vertical enhancement element for enhancing a given vertical-direction spatial frequency characteristic of said TV signal;

a noise elimination control element for controlling said beam-spot-length control element and said vertical enhancement element so as to compensate said vertical-direction spatial frequency characteristic according to the increase or decrease of said beam spot length; and

~~A screen noise eliminating apparatus as claimed in claim 1 further comprising~~ a control information memory storing enhancement levels of the spatial frequency characteristic at respective positions on the screen wherein said noise elimination control

element controls the increase or decrease of said beam spot length according to an output of said control information memory.

8. (Previously Presented) A screen-noise eliminating apparatus as claimed in claim 3 further comprising a control information memory storing enhancement levels of the spatial frequency characteristic at respective positions on the screen wherein said noise elimination control element causes to modulate said scanning velocity in the horizontal direction according to an output of said control information memory.

9. (Currently Amended) A screen-noise eliminating apparatus comprising:

a beam-spot-length control element for increasing or decreasing the vertical length of a beam spot on a display screen generated by an electron beam of a cathode-ray tube for displaying a TV signal;

a vertical enhancement element for enhancing a given vertical-direction spatial frequency characteristic of said TV signal;

a noise elimination control element for controlling said beam-spot-length control element and said vertical enhancement element so as to compensate said vertical-direction spatial frequency characteristic according to the increase or decrease of

said beam spot length, ~~A screen noise eliminating apparatus as~~
~~claimed in claim 1~~ wherein said noise elimination control element
controls said beam spot length to be lengthened in the vertical
direction when the display screen is viewed from a distance closer
than an adequate viewing distance, and controls said beam spot
length to be unchanged and said given vertical-direction spatial
frequency characteristic and horizontal-direction spatial frequency
characteristic to be enhanced when the display screen is viewed
from a distance farther than the adequate viewing distance.

10. (Currently Amended) A screen-noise eliminating apparatus
comprising:

a beam-spot-length control element for increasing or
decreasing the vertical length of a beam spot on a display screen
generated by an electron beam of a cathode-ray tube for displaying
a TV signal;

a vertical enhancement element for enhancing a given
vertical-direction spatial frequency characteristic of said TV
signal; and

a noise elimination control element for controlling said
beam-spot-length control element and said vertical enhancement
element so as to compensate said vertical-direction spatial
frequency characteristic according to the increase or decrease of
said beam spot length, ~~A screen noise eliminating apparatus as~~

~~elaimed in claim 1~~ wherein said vertical enhancement element comprises:

a 1H delay element for delaying said TV signal by one horizontal scanning line;

a 1-field delay element for delaying said TV signal by 1 field;

a signal selection element for selecting an output of said 1-field delay element when a first control signal inputted from said noise elimination control element indicates an interlaced scanning signal, and selecting an output of said 1H delay element when said first control signal indicates a sequential scanning signal, and outputting said selected output;

a first coefficient multiplier element for multiplying said TV signal by a first coefficient determined by a second control signal outputted from said noise elimination control element;

a second coefficient multiplier element for multiplying the output from said signal selection element by a second coefficient determined by said second control signal;

a third coefficient multiplier element for delaying the output from said signal selection element by 1H and multiplying it by a third coefficient determined by said second control signal; and

an adder element for outputting a summed signal which represents a sum of the output of said first coefficient multiplier

element, the output of said second coefficient multiplier element and the output of said third coefficient multiplier element.

11. (Currently Amended) A screen-noise eliminating apparatus as claimed in claim 4 wherein said horizontal enhancement element comprises:

a ~~fourth~~first coefficient multiplier element for multiplying said TV signal by a ~~fourth~~first coefficient determined by a ~~third~~ control signal inputted from said noise elimination control element;

a ~~fifth~~second coefficient multiplier element for delaying ~~said a~~ summed signal by 1-pixel time and multiplying it by a ~~fifth~~second coefficient determined by said ~~third~~ control signal;

a ~~sixth~~third coefficient multiplier element for delaying said summed signal by 2-pixel time and multiplying it by a ~~sixth~~third coefficient determined by said ~~third~~ control signal; and

an adder element for outputting another summed signal which is a sum of the output of said ~~fourth~~first coefficient multiplier ~~means~~element, the output of said ~~fifth~~second coefficient multiplier element and the output of said ~~sixth~~third coefficient multiplier element.

12. (Currently Amended) A cathode-ray tube display apparatus comprising:

a cathode-ray tube for displaying a TV signal;

an electron-beam driving element for driving an electron beam of said cathode-ray tube; and

a screen-noise eliminating apparatus, wherein said screen-noise eliminating apparatus comprises:

a beam-spot-length control element controlling for increasing or decreasing the length of a beam spot on a display screen generated by said electron beam in the vertical direction, said beam-spot-length control element operating to create a beam spot in a first state when a number of scanning lines in the TV signal exceeds a certain number, and operating to create a beam spot in a second state when a number of scanning lines in the TV signal is less than a certain number, wherein the beam spot has a greater beam length in said second state than in said first state;

a vertical enhancement element for enhancing a given vertical-direction spatial frequency characteristic of said TV signal; and

a screen-noise elimination control element for controlling said beam-spot-length control element and said vertical enhancement element so as to compensate said vertical-direction spatial frequency characteristic according to the ~~increase or decrease of~~ said beam spot length resulting from operation of said beam-spot-length control element.

13. (Previously Presented) A cathode-ray tube display apparatus as claimed in claim 12 wherein said electron-beam driving element comprises an electrostatic focus electrode, and said beam-spot-length control element comprises a driving circuit for said electrostatic focus electrode.

14. (Previously Presented) A cathode-ray tube display apparatus as claimed in claim 12 wherein said electron-beam driving element comprises an electromagnetic focus coil, and said beam-spot-length control element comprises a driving circuit for said electromagnetic focus coil.

15. (Currently Amended) A cathode-ray tube display apparatus as claimed in claim 12 wherein said electron-beam driving element comprises a ~~second~~—vertical deflection coil, and said beam-spot-length control element comprises a driving circuit for said ~~second~~—vertical deflection coil.